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PREDICTING GRADE ONE READING PERFORMANCE--INTELLIGENCE VS. READING READINESS TESTS.

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THE COMPARATIVE VALIDITY OF THE LEE-CLARK READING READINESS TEST AND THE CALIFORNIA TEST OF MENTAL MATURITY (CTMM) FOR PREDICTING GRADE 1 READING SUCCESS WAS STUDIED. ALL ENTERING FIRST-GRADE PUPILS IN TWO ELEMENTARY SCHOOLS IN A LOW-MIDDLE-CLASS COMMUNITY WERE ADMINISTERED BOTH TESTS DURING THE FIRST 3 WEEKS OF SCHOOL. PERFORMANCES ON THESE TESTS WERE CORRELATED WITH SCORES ON THE LEE-CLARK READING TEST, PRIMER (FORM A), AND TEACHER MARKS NEAR THE END OF THE SCHOOL YEAR. THE READINESS TEST DID AT LEAST AS WELL IN PREDICTING FIRST-GRADE PERFORMANCE AS THE CTMM. THIS FINDING IS CONSISTENT WITH OTHER INVESTIGATIONS WHICH HAVE COMPARED READINESS TESTS WITH INTELLIGENCE TESTS FOR PREDICTING GRADE 1 READING SUCCESS. A TABLE AND REFERENCES ARE INCLUDED. THIS PAPER WAS PRESENTED AT THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION MEETING (NEW YORK CITY, FEBRUARY 1967). (H)

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RE 000 157

PREDICTING GRADE ONE READING PERFORMANCE: INTELLIGENCE vs. READING READINESS TESTS*

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Problem

The comparative validities for predicting grade one reading success of tests of intelligence and reading readiness is an issue that has received surprisingly little attention, especially in view of the fact that the functions of both types of tests are highly similar for beginning first-grade pupils. Several studies (e.g., Dobson and Hopkins, 1963) have been reported in which one or the other type of test was used, although non-comparable samples make an evaluation of the comparative efficacy uncertain. Mattick (1963) administered both types of tests but used a criterion of success obtained after only two months of grade one. In addition, different schools employed different tests which poses a special problem since some were ungraded which would have large effects on obtained correlations since variability within classes would be markedly reduced.

Procedure

All entering grade one pupils in two elementary schools in a lower-middle class community were administered both the Lee-Clark Reading Readiness Test (LCRR) (1962 revision) and the California Test of Mental Maturity (CTMM)(1957 S-form) during the first three weeks of school, the latter test always being administered last. Performances on these tests were correlated with two independent criteria, subsequently gathered near the end of the school year: (1) scores on the Lee-Clark Reading Test: Primer (LCRT) (Form A), and (2) end-of-year teacher marks, using a four-category scale. In addition to the two predictors and two criteria, other pupil data were collected in order to evaluate the degree of improvement that could result from the use of multiple predictors. The teachers reported their final marks prior to being made aware of the pupils' scores on the standardized reading test. Overaged pupils were removed from the sample to avoid the confounding effects of non-promotion, etc. (Age in months: $\bar{X} = 76.8$, $s = 4.1$). Since a

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Type I error in this situation is quite innocuous, α was set leniently at .20 in order to reduce the probability of a Type II error, the more serious in this type of study.

Results

Table 1 gives the predictive validities of the LCRR, language, non-language, and total CTMM IQ's for the 157 pupils on whom complete data were available.

TABLE 1

VALIDITIES OF VARIOUS TESTS FOR PREDICTING GRADE ONE READING PERFORMANCE

	Predictors					Criteria	
	(1)	(2)	(3)	(4)	(5)[b]	(6)	(7)
Predictors							
(1) Lang. IQ		.476	.853[a]	.364	.342	.448	.497
(2) N-Lang. IQ			.857[a]	.442	.422	.431	.430
(3) Total IQ				.466	.445	.513	.541
(4) LCRR (rs)					.934	.571	.612[c]
(5) LCRR (gp)						.595	.590
Criteria							
(6) T-marks							.748
(7) LCRT (rs)							
$\bar{X}$	101.8	103.4	102.8	49.0	1.00	2.45	26.0
S	16.8	17.0	14.7	10.3	.55	.94	8.1

[a]Spurious correlation since total IQ is an average of the language and non-language IQ.

[b]Both raw scores and grade placement units are reported to illustrate the essential interchangeability of findings irrespective of which of these two scales is used.

[c]Since age is, in effect, held constant in IQ determinations, $r_{47.age}$ was computed to make this value also independent of age effects. The partial correlation did not differ from the value given the table until the fourth decimal place.

Although the predictive validity coefficients for the reading readiness test numerically exceeded those for the intelligence tests on both criteria, the differences proved to be insufficiently great to allow rejection of the null hypothesis for either criterion. In predicting teacher marks, correlation coefficients of .571 and .513 and corresponding .95 confidence intervals of .455 - .668 and .386 -.619 were observed for the reading readiness and intelligence tests respectively. The difference between the non-independent correlation coefficients was not significant (t = .90). For predicting performance on the standardized reading test, corresponding non-significantly different coefficients of .612 and .541 (t = 1.16) were observed, the larger again being associated with the readiness test. The .95 confidence intervals were .503 - .701 and .446 - .642 respectively.

A multiple regression using both IQ and LCRR as predictors yielded multiple correlations .05 - .06 (corrected for bias) greater than the LCRR alone. Adding father occupation, sex, and age to the regression failed to add meaningfully to the accuracy in prediction; the multiple R's only increased approximately an additional .01.

In view of the fact that the reading readiness test did at least as well in predicting first-grade reading performance, it was considered to be preferable to the intelligence test when other relevant factors are considered: (1) it requires considerably less testing time, (2) it is more easily and meaningfully interpreted, (3) the effects of improper interpretation are much less serious to the pupil, and (4) it is less expensive.

The primary conclusion of the study, that the readiness test did at least as well in predicting first-grade reading performance, is consistent with those reported by Mattick (1963) for the Metropolitan Reading Test and the Lorge-Thorndike Intelligence Test; it is also in agreement with Hahn's (1966) study in which the Murphey-Durrell Reading Readiness Analysis and the Metropolitan Readiness Test were compared with the Pitner-Cunningham General Ability Test: Verbal Series.

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